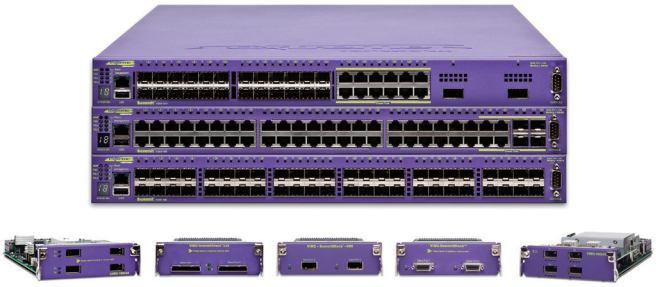
Summit X480 Series



Summit® X480 Series—the scalable and versatile gigabit and 10 Gigabit Ethernet switch.

The Summit X480 series switch is a versatile, high-end Ethernet switch for data center, enterprise aggregation, and Carrier Ethernet deployments. Summit X480 helps optimize application performance for a variety of network deployments with its rich features and high scalability.

Summit X480 provides high density for Gigabit Ethernet in a small 1RU form factor for up to 48 ports in one system and 384 ports in a stacked system using backward compatible SummitStack™, high-speed SummitStack128 running at 128 gigabits per second, SummitStack-V, which utilizes 10 GbE ports as stacking ports, enabling the use of standard cabling and optics technologies used for 10 GbE, SummitStack V80, V160, or V320for 80 Gbps, 160 Gbps, or 320 Gbps of stacking bandwidth using standard cabling and optics for 40 GbE Summit X480 also offers 10 Gigabit Ethernet connectivity for up to eighteen ports in one system and 80 ports in a stacked system using QSFP+ to SFP+ breakout cables. For emerging demands from voice/data convergence and storage, Summit X480 provides highly scalable Layer 2/3 switching and MPLS/H-VPLS by supporting up to 512K Layer 2 MAC addresses or 512K IPv4 Longest Prefix Match routing tables. Summit X480 enables data center, enterprise and Carrier Ethernet aggregation and core backbone deployment in AC-powered and DC-powered environments.

Summit X480 simplifies network operation with the ExtremeXOS modular OS, available across a wide range of Extreme Networks® Ethernet switches. The ExtremeXOS operating system provides high availability and simplicity with one OS everywhere in the network.

Target Applications

- Top-of-rack switch for servers in enterprise data centers
- High-performance core switch for a small network
- High-performance gigabit aggregation switch in a traditional three-tiered network
- Carrier Ethernet network switch that can aggregate connectivity for first mile access concentrators such as DSLAM and CMTS

High-Performance Switching and Routing

- 48-port Gigabit Ethernet or 24-port gigabit and 2-port 10 Gigabit Ethernet connectivity in a 1RU form factor
- Optional 4-port 40 Gigabit Ethernet (GbE) to provide 160 Gbps uplinks
- Optional 4-port 10 Gigabit Ethernet (GbE) to provide 40 Gbps uplinks
- Optional 40 Gbps stacking for up to eight switches in a stack to provide up to 384 Gigabit Ethernet connections in one logically integrated unit
- Optional 128 Gbps stacking for up to eight switches in a stack to provide high-speed stacking
- Optional stacking via 10 GbE ports (SummitStack-V) Optional SummitStack-V80 80 Gbps stacking
- Optional SummitStack-V160 160 Gbps stacking or Summit Stack-V320 320 Gbps stacking
- Supports Layer 2 and Layer 3 switching, as well as MPLS/H-VPLS

High Scalability in a 1RU Compact Switch

- Up to 512K MAC address support for scalable Layer 2 networks
- Up to 512K IPv4 routes for scalable Layer 3 networks
- Up to 60K Access Control Lists (ACLs) for secure networks

High Availability

- ExtremeXOS® modular OS for highly available network operation
- Carrier-grade redundant networking protocol including Ethernet Automatic Protection Switching (EAPS)
- Internal redundant AC/DC power supply and field replaceable/hot swappable fan tray

Make Your Network Mobile

High-Performance and Highly Scalable Switching and Routing

Summit X480 offers core-class intelligent switching and routing with exceptional port density and high-performance stacking technology powered by the ExtremeXOS modular OS. With its high performance switching and routing, Summit X480 helps enhance the data center, Carrier Ethernet and enterprise aggregation network.

High-Performance Switching and Routing

Summit X480 is available in three different port configuration options: 24-port Gigabit Ethernet and 2-port 10 Gigabit Ethernet (Summit X480-24x), 48-port copper Gigabit Ethernet (Summit X480-48t), or 48-port fiber Gigabit Ethernet (Summit X480-48x). All front panel ports run at non-blocking, wire-speed performance and can carry wire-rate traffic towards the Versatile Interface Module-2 (VIM2) slot. Summit X480 offers flexible configuration by using optional VIM2 modules which are: 4-port 10 Gigabit Ethernet Module (VIM2-10G4X), 2-port SummitStack Module (VIM2-SummitStack), 2-port SummitStack128 Module (VIM2-SummitStack128) or 2-port SummitStack-V80 Module (VIM2-SummitStack-V80) (see Figure 1: Port configuration options for Summit X480 switches).

Flexible Port Configuration

Summit X480 offers flexible port configurations from standard configuration to optional VIM2 modules. For Summit X480-24x, half of the Gigabit Ethernet ports can handle dual personality—select from either 10/100/1000BASE-T copper Gigabit Ethernet or 100/1000BASE-X fiber Gigabit Ethernet connectivity. In the case of Summit X480-48t, the last four Gigabit Ethernet ports are configured as dual personality ports to provide flexibility between copper and fiber Gigabit Ethernet.

Through the VIM2 slot, Summit X480 can add an additional four 10 Gigabit Ethernet or SummitStack stacking ports. For stacking, depending upon the needs for bandwidth across the units in a stack, Summit X480 supports 40 Gbps SummitStack, 80 Gbps SummitStack-V80 or 128Gbps SummitStack128 through VIM2 option modules (See Figure 2: Summit X480-24x flexible port configuration). A third option, SummitStack-V, utilizes 10 GbE ports as stacking ports.

Summit X480 supports flexible 10 gigabit optical transceivers such as 10GBASE-SR, LR, ER and ZR as well as tunable DWDM. Tunable DWDM (Dense Wavelength Division Multiplexing) support allows service providers and others to tune XFP 10 Gigabit Ethernet optics to a specific frequency, reducing the need for additional fiber runs and XFP sparing. Digital Diagnostics Monitoring Interface support allows service providers to monitor and diagnose pluggable optics in real-time.

SummitStack – High-Performance Stacking

Summit X480 supports SummitStack, which provides 40 Gbps (VIM2-SummitStack), 80 Gbps (VIM2-SummitStack-V80) or 128 Gbps (VIM2-SummitStack128) of stacking bandwidth. High-speed 128 Gbps stacking is ideal for demanding applications where a high volume of traffic traverses through the stacking links, yet bandwidth is not compromised through stacking. High-speed stacking is very useful in applications such as top of rack when stacked with Summit X480 and Summit X650 (requires optional conversion cable) and gigabit aggregation in large enterprise or data center networks. With the longer stacking cables such as 5-meters, stacking can be configured through different racks horizontally in a row (see Figure 3) as opposed to typical stacking system installed vertically in a rack.

SummitStack-V – Flexible Stacking Over 10 Gigabit Ethernet

SummitStack-V capability utilizes 10 GbE ports as stacking ports, enabling the use of standard cabling and optics technologies used for 10 GbE such as XFP, SFP+, 10GBASE-T and XENPAK. SummitStack-V provides long-distance stacking connectivity of up to 40 km while reducing the cable complexity of implementing a stacking solution. SummitStack-V enabled 10 GbE ports must be physically direct-connected. SummitStack-V is compatible with Summit X450e, X450a, X460, X480, X650, X670 and X670V switches running the same version of ExtremeXOS.

Software Defined Networking (SDN)

ExtremeXOS implementations of OpenFlow APIs allow an external OpenFlow-based SDN controller to access and control the forwarding plane of ExtremeXOS network devices. ExtremeXOS-based switches offer a programming interface through OpenFlow to enable high degree of automation in provisioning network services for many upper layer business critical applications running the OpenFlow-based SDN controller.

Extreme XOS-based switches also allow for integration with the OpenStack open source cloud computing platform for public and private clouds through the Extreme Networks Quantum plugin. The plugin provides a scalable, automated, rich API-driven system that enables networking-as-a-service model managing data center interconnect solutions and large multi-tenant networks.

VIM Options	None (default option)	VIM2-10G4X	VIM2-SummitStack	VIM2-SummitStack-V80	VIM2-Summit-Stack128	VIM3-40G4X
Summit X480-24x	• 24 x 100/1000BASE-X (SFP) • 12 x 10/100/1000BASE-T (shared with the last 12 SFP ports) • 2 x 10GBASE-X (XFP)	• 24 x 100/1000BASE-X (SFP) • 12 x 10/100/1000BASE-T (shared with the last 12 SFP ports) • 6 x 10GBASE-X (XFP)	• 24 x 100/1000BASE-X (SFP) • 12 x 10/100/1000BASE-T (shared with the last 12 SFP ports) • 2 x 10GBASE-X (XFP) • 2 x SummitStack	• 24 x 100/1000BASE-X (SFP) • 12 x 10/100/1000BASE-T (shared with the last 12 SFP ports) • 2 x 10GBASE-X (XFP) • 2 x SummitStack-V80	• 24 x 100/1000BASE-X (SFP) • 12 x 10/100/1000BASE-T (shared with the last 12 SFP ports) • 2 x 10GBASE-X (XFP) • 2 x SummitStack128	• 24 x 100/1000BASE-X (SFP) • 12 x 10/100/1000BASE-T (shared with the last 12 SFP ports) • 2 x 10GBASE-X (XFP) • 4 x 40GBASE-X (QSFP+)
Summit X480-48t	• 48 x 10/100/1000BASE-T • 4 x 100/1000BASE-X SFP (shared with the last 4 10/100/1000BASE-T ports)	• 48 x 10/100/1000BASE-T • 4 x 100/1000BASE-X SFP (shared with the last 4 10/100/1000BASE-T ports) • 4 x 10GBASE-X (XFP)	• 48 x 10/100/1000BASE-T • 4 x 100/1000BASE-X SFP (shared with the last 4 10/100/1000BASE-T ports) • 2 x SummitStack	• 48 x 10/100/1000BASE-T • 4 x 100/1000BASE-X SFP (shared with the last 4 10/100/1000BASE-T ports) • 2 x SummitStack-V80	• 48 x 10/100/1000BASE-T • 4 x 100/1000BASE-X SFP (shared with the last 4 10/100/1000BASE-T ports) • 2 x SummitStack128	• 48 x 10/100/1000BASE-T • 4 x 100/1000BASE-X SFP (shared with the last 10/100/1000BASE-T ports) • 4 x 40GBASE-X (QSFP+)
Summit X480-48x	• 48 x 100/1000BASE-X SFP	• 48 x 100/1000BASE-X SFP • 4 x 10GBASE-X (XFP)	• 48 x 100/1000BASE-X SFP • 2 x SummitStack	• 48 x 100/1000BASE-X SFP • 2 x SummitStack-V80	• 48 x 100/1000BASE-X SFP • 2 x SummitStack128	• 48 x 100/1000BASE-X SFP • 4 x 40GBASE-X (QSFP+)

Table 1: Port Configuration Options for Summit X480 Switches

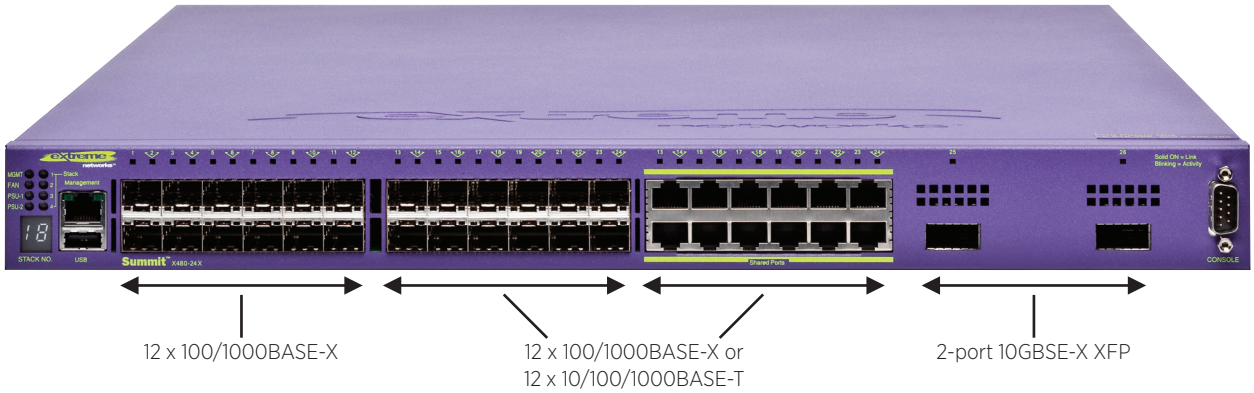


Figure 1: Summit X480-24x Flexible Port Configuration

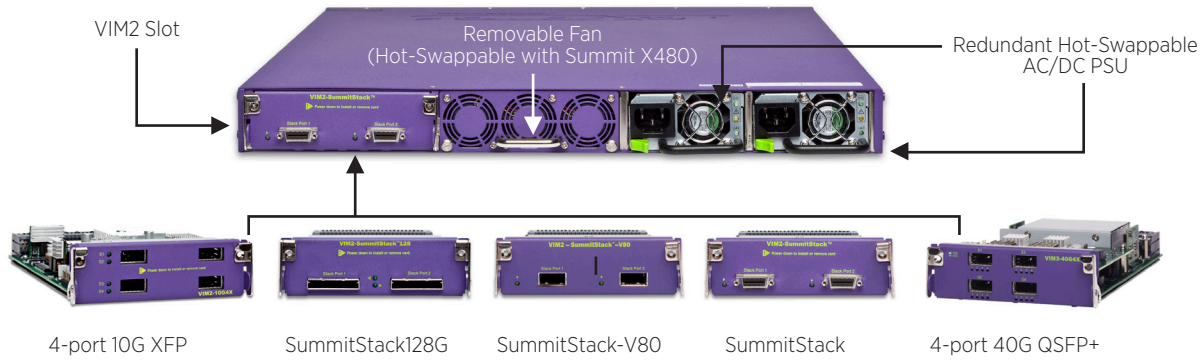


Figure 2: Summit X480 High Availability Design

- **Single management point for up to eight units**
- **High-speed 40G–320G stacking**
- **Rapid Failover for converged applications**
- **Can mix Summit X670, X650, X480, X460, X450e, X450a, and X250e series switches**

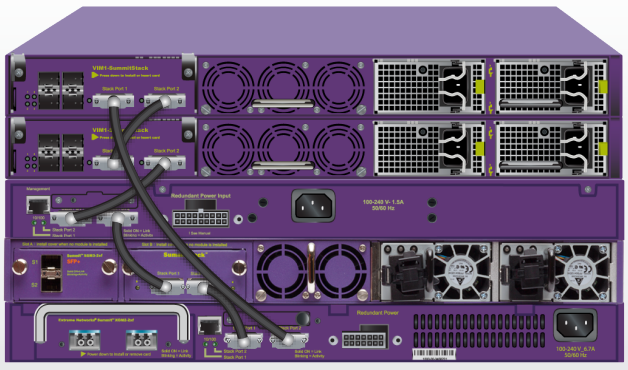


Figure 3: SummitStack Stacking Architecture

Technical Specifications

Summit X480

General Specifications

Performance

- 176 Gbps switch fabric bandwidth
- 224 Gbps, 448 Gbps (with VIM2-10G4X or VIM3-40G4X) aggregated switch bandwidth
- 71.4 Mpps, 101.2 Mpps (with VIM2-SummitStack), 166.7 Mpps (with VIM2-SummitStack128), 130.9 Mpps (with VIM2-10G4X or VIM3-40G4X) frame forwarding rate
- Less than 4 microsecond latency (64-byte)
- 9216 Byte maximum packet size (Jumbo Frame)
- 128 load sharing trunks, up to 8 members per trunk
- 4,094 VLANs (Port, Protocol, IEEE 802.1Q)
- 8,192 ingress and 1,024 egress ACL rules/ Front panel ports and /VIM2-10G4X module

CPU, Memory

- 64bit MIPS Processor Dual Core, 1GHz clock
- 1GB ECC DRAM
- 256MB Compact Flash
- USB port for external USB flash

QoS, Rate Limiting

- 8,192 ingress bandwidth meters/Front panel ports and /VIM2-10G4X module
- Ingress and egress bandwidth policing/rate limiting per flow/ACL
- 8 QoS egress queues/port
- Egress bandwidth rate shaping per egress queue and per port
- Rate Limiting Granularity: 8 Kbps

LED Indicators

- Per port status LED including power status
- System Status LEDs: management, fan and power

External Ports

- 12-port 100/1000BASE-X SFP, 12-port 100/1000BASE-X SFP and 10/100/1000BASE-T Combo, 2-port 10GBASE-X XFP, 1 open slot for VIM2 or VIM3 modules (Summit X480-24x)
- 44-port 10/100/1000BASE-T, 4-port 100/1000BASE-X SFP and 10/100/1000BASE-T Combo, 1 open slot for VIM2 or VIM3 modules (Summit X480-48t)
- 48-port 100/1000BASE-X SFP, 1 open slot for VIM2 or VIM3 modules (Summit X480-48x)
- 1-port RS-232c Serial (control port)
- 1 10/100/1000BASE-T out-of-band management port

External Ports for VIM2 Modules

- 4-port 10GBASE-X XFP (VIM2-10G4X)
- 2-port 20G SummitStack (VIM2-SummitStack)
- 2-port 64G SummitStack (VIM2-SummitStack128)

External Ports for VIM3 Modules

- 4-port 40GBASE-X QSFP+ (VIM3-40G4X)

Option Slot

- Slot for Versatile Interface Module 2 (VIM2) or Versatile Interface Module 3 (VIM3) available for Summit X480-24x, Summit X480-48t and Summit X480-48x

Power Supply Support

- Summit X480 AC PSU and Summit X480 DC PSU

Forwarding Tables and ACLs

Summit X480 provides flexible configuration options for various deployments.

Type	L2 MAC	L3 Host (IPv4/v6)	L3 LPM Route (IPv4/v6)	ACL (Ingress/Egress)
Lower Power Mode	32K	16K/8K	16K/8K	8K/1K
Default (Layer 2+Layer 3)	256K	16K/8K	256K/8K	8K/1K
Large Layer 2 Network Configuration	512K	16K/8K	16K/8K	8K/1K
Large Layer 3 Network Configuration	32K	16K/8K	512K/8K	8K/1K
Security Configuration	32K	16K/8K	16K/8K	60K/1K

Physical Specifications

Dimensions

Physical Dimensions

- Summit X480-24x switch
- Summit X480-48x switch
- Summit X480-48t switch
  Height: 1.73 inches (4.4 cm)
  Width: 17.4 inches (44.1 cm)
  Depth: 19.0 inches (48.3 cm)
- VIM2-SummitStack module
- VIM2-10G4X module
- VIM2-SummitStack128 module
- VIM3-40G4X module
  Height: 1.7 inches (4.3 cm)
  Width: 5.2 inches (13.2 cm)
  Depth: 9.9 inches (25.2 cm)
- Summit X480 fan module
  Height: 1.7 inches (4.3 cm)
  Width: 5.2 inches (13.2 cm)
  Depth: 9.9 inches (25.2 cm)

Weight

- Summit X480-24x switch 20.9 lb (9.5 kg)
- Summit X480-48x switch 22.7 lb (10.3 kg)
- Summit X480-48t switch 21.2 lb (9.6 kg)
  NOTE: Switch weights include installed fan module. They do not include installed VIM2 modules or PSUs.
- VIM2-SummitStack module 2.03 lb (0.92 kg)
- VIM2-10G4X module 2.76 lb (1.25 kg)
- VIM2-SummitStack128 module 2.05 lb (0.93 kg)
- VIM3-40G4X module 2.40 lb (1.09 kg)
- Summit X480 fan module 0.45 lb (0.99 kg)

Fan Speed

- Minimum speed 4500 RPM
- Maximum speed 18000 RPM

Operating Specifications

- Operating Temperature Range: 0° C to 45° C (32° F to 113° F)
- Operating Humidity: 10% to 93% relative humidity, non-condensing
- Operating Altitude: 0-3,000 meters (9,850 feet)
- Operational Shock (Half Sine): 30 m/s2 (3 g), 11ms, 60 Shocks
- Operational Random Vibration: 3-500 MHz @ 1.5g rms

Storage & Transportation Conditions (Packaged)

- Transportation Temperature: -40° C to 70° C (-40° F to 158° F)
- Storage and Transportation Humidity: 10% to 95% RH, non-condensing
- Packaged Shock (Half Sine): 180 m/s2 (18 g), 6ms, 600 shocks
- Packaged Sine Vibration: 5-62 Hz @ Velocity 5mm/s, 62-500 Hz @ 0.2G
- Packaged Random Vibration: 5-20 Hz @ 1.0 ASD w/-3dB/oct. from 20-200 Hz
- 14 drops min on sides & corners @ 42" (<15 kg box)

Technical Specifications

Power Specifications

Summit X480-24x

Summit X480-24x with No Installed VIM (AC Power Supply)

- Nominal input ratings 100 to 240 V, 50/60 Hz, 3.5 A
- Input current 2.0 A @ 100 V (low-line) 0.9 A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 195 W, 663 BTU/hr
- Power consumption, Watts, BTU 195 W, 663 BTU/hr

Summit X480-24x with VIM2-SummitStack Module (AC Power Supply)

- Nominal input ratings 100 to 240 V, 50/60 Hz, 3.5 A
- Input current 2.01 A @ 100 V (low-line) 0.88 A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 200 W, 680 BTU/hr
- Power consumption, Watts, BTU 200 W, 680 BTU/hr

Summit X480-24x with VIM2-10G4X Module (AC Power Supply)

- Nominal input ratings 100 to 240 V, 50/60 Hz, 3.5 A
- Input current 2.4 A @ 100 V (low-line) 1.1 A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 241 W, 823 BTU/hr
- Power consumption, Watts, BTU 241 W, 823 BTU/hr

Summit X480-24x with VIM2-SummitStack128 Module (AC Power Supply)

- Nominal input ratings 100 to 240 V , 50/60 Hz, 3.5 A
- Input current 2.08 A @ 100 V (low-line) 0.91 A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 206 W, 704 BTU/hr
- Power consumption, Watts, BTU 206 W, 704 BTU/hr

Summit X480-24x with VIM3-40G4X Module (AC Power Supply)

- Nominal input ratings 100 to 240 V , 50/60 Hz, 3.5 A
- Input current 2.40 A @ 100 V (low-line) 0.95A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 238 W, 812 BTU/hr
- Power consumption, Watts, BTU 238 W, 812 BTU/hr

Summit X480-24x with No Installed VIM (DC Power Supply)

- Nominal input ratings 48 V, 7.5 A
- Input current 3.25 A @ 48 V (low-line) 2.6 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 156 W, 532 BTU/hr
- Power consumption, Watts, BTU 156 W, 532 BTU/hr

Summit X480-24x with VIM2-SummitStack Module (DC Power Supply)

- Nominal input ratings 48 V, 7.5 A
- Input current 3.4 A @ 48 V (low-line) 2.7 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 161 W, 550 BTU/hr
- Power consumption, Watts, BTU 161 W, 550 BTU/hr

Summit X480-24x with VIM2-10G4X Module (DC Power Supply)

- Nominal input ratings 48 V, 7.5 A
- Input current 5.7 A @ 48 V (low-line) 4.2 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 246 W, 839 BTU/hr
- Power consumption, Watts, BTU 246 W, 839 BTU/hr

Summit X480-24x with VIM2-SummitStack128 Module (DC Power Supply)

- Nominal input ratings 48 V, 7.5 A
- Input current 3.5 A @ 48 V (low-line) 2.8 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 167 W, 569 BTU/hr
- Power consumption, Watts, BTU 167 W, 569 BTU/hr

Summit X480-24x with VIM3-40G4X Module (DC Power Supply)

- Nominal input ratings 48 V, 7.5 A
- Input current 6.4 A @ 48 V (low-line) 4.5 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 265 W, 904 BTU/hr
- Power consumption, Watts, BTU 265 W, 904 BTU/hr

Summit X480-48x

Summit X480-48x with No Installed VIM (AC Power Supply)

- Nominal input ratings 100 to 240 V, 50/60 Hz, 4.0 A
- Input current 2.0 A @ 100 V (low-line) 0.9 A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 200 W, 675 BTU/hr
- Power consumption, Watts, BTU 200 W, 675 BTU/hr

Summit X480-48x with VIM2-SummitStack Module (AC Power Supply)

- Nominal input ratings 100 to 240 V, 50/60 Hz, 4.0 A
- Input current 2.01 A @ 100 V (low-line) 0.89 A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 203 W, 692 BTU/hr
- Power consumption, Watts, BTU 203 W, 692 BTU/hr

Summit X480-48x with VIM2-10G4X Module (AC Power Supply)

- Nominal input ratings 100 to 240 V, 50/60 Hz, 4.0 A
- Input current 2.3 A @ 100 V (low-line) 1.0 A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 227 W, 774 BTU/hr
- Power consumption, Watts, BTU 227 W, 774 BTU/hr

Summit X480-48x with VIM2-SummitStack128 Module (AC Power Supply)

- Nominal input ratings 100 to 240 V, 50/60 Hz, 4.0 A
- Input current 2.04 A @ 100 V (low-line) 0.89 A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 202 W, 688 BTU/hr
- Power consumption, Watts, BTU 202 W, 688 BTU/hr

Summit X480-48x with VIM3-40G4X Module (AC Power Supply)

- Nominal input ratings 100 to 240 V, 50/60 Hz, 4.0 A
- Input current 2.6 A @ 100 V (low-line) 0.96 A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 255 W, 870 BTU/hr
- Power consumption, Watts, BTU 255 W,
- 870 BTU/hr

Summit X480-48x with No Installed VIM (DC Power Supply)

- Nominal input ratings 48 V, 8.0 A
- Input current 3.3 A @ 48 V (low-line) 2.6 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 158 W, 540 BTU/hr
- Power consumption, Watts, BTU 158 W, 540 BTU/hr

Summit X480-48x with VIM2-SummitStack Module (DC Power Supply)

- Nominal input ratings 48 V, 8.0 A
- Input current 3.4 A @ 48 V (low-line) 2.7 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 163 W, 556 BTU/hr
- Power consumption, Watts, BTU 163 W, 556 BTU/hr

Technical Specifications

Summit X480-48x with VIM2-10G4X Module (DC Power Supply)

- Nominal input ratings 48 V , 8.0 A
- Input current 5.7 A @ 48 V (low-line) 4.4 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 246 W, 839 BTU/hr
- Power consumption, Watts, BTU 246 W, 839 BTU/hr

Summit X480-48x with VIM2-SummitStack128 Module (DC Power Supply)

- Nominal input ratings 48 V, 8.0 A
- Input current 3.4 A @ 48 V (low-line) 2.7 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 165 W, 562 BTU/hr
- Power consumption, Watts, BTU 165 W, 562 BTU/hr

Summit X480-48x with VIM3-40G4X Module (DC Power Supply)

- Nominal input ratings 48 V, 8.0 A
- Input current 6.42 A @ 48 V (low-line) 4.3 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 265 W, 904 BTU/hr
- Power consumption, Watts, BTU 265 W, 904 BTU/hr

Summit X480-48t

Summit X480-48t with No Installed VIM (AC Power Supply)

- Nominal input ratings 100 to 240 V, 50/60 Hz, 3.0 A
- Input current 1.9 A @ 100 V (low-line) 0.8 A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 182 W, 622 BTU/hr
- Power consumption, Watts, BTU 182 W, 622 BTU/hr

Summit X480-48t with VIM2-SummitStack Module (AC Power Supply)

- Nominal input ratings 100 to 240 V, 50/60 Hz, 3.0 A
- Input current 1.89 A @ 100 V (low-line) 0.84 A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 187 W, 639 BTU/hr
- Power consumption, Watts, BTU 187 W, 639 BTU/hr

Summit X480-48t with VIM2-10G4X Module (AC Power Supply)

- Nominal input ratings 100 to 240 V, 50/60 Hz, 3.0 A
- Input current 2.34 A @ 100 V (low-line) 1.0 A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 232 W, 793 BTU/hr
- Power consumption, Watts, BTU 232 W, 793 BTU/hr

Summit X480-48t with VIM2-SummitStack128 Module (AC Power Supply)

- Nominal input ratings 100 to 240 V, 50/60 Hz, 3.0 A
- Input current 1.89 A @ 100 V (low-line) 0.84 A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 256 W, 871 BTU/hr
- Power consumption, Watts, BTU 256 W, 871 BTU/hr

Summit X480-48t with VIM3-40G4X Module (AC Power Supply)

- Nominal input ratings 100 to 240 V, 50/60 Hz, 3.0 A
- Input current 2.4 A @ 100 V (low-line) 0.98 A @ 240 V (high-line)
- Heat dissipation, Watts, BTU 240 W, 819 BTU/hr
- Power consumption, Watts, BTU 240 W, 819 BTU/hr

Summit X480-48t with No Installed VIM (DC Power Supply)

- Nominal input ratings 48 V, 7.0 A
- Input current 3.1 A @ 48 V (low-line) 2.4 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 148 W, 503 BTU/hr
- Power consumption, Watts, BTU 148 W, 503 BTU/hr

Summit X480-48t with VIM2-SummitStack Module (DC Power Supply)

- Nominal input ratings 48 V, 7.0 A
- Input current 3.24 A @ 48 V (low-line) 2.5 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 153 W, 520 BTU/hr
- Power consumption, Watts, BTU 153 W, 520 BTU/hr

Summit X480-48t with VIM2-10G4X Module (DC Power Supply)

- Nominal input ratings 48 V, 7.0 A
- Input current 3.1 A @ 48 V (low-line) 2.4 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 148 W, 503 BTU/hr
- Power consumption, Watts, BTU 148 W, 503 BTU/hr

Summit X480-48t with VIM2-SummitStack128 Module (DC Power Supply)

- Nominal input ratings 48 V, 7.0 A
- Input current 3.2 A @ 48 V (low-line) 2.5 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 153 W, 522 BTU/hr
- Power consumption, Watts, BTU 153 W, 522 BTU/hr

Summit X480-48t with VIM3-40G4X Module (DC Power Supply)

- Nominal input ratings 48 V, 7.0 A Input current 6.1 A @ 48 V (low-line) 4.0 A @ 60 V (high-line)
- Heat dissipation, Watts, BTU 250 W, 854 BTU/hr
- Power consumption, Watts, BTU 250 W, 854 BTU/hr

Power Supply Units

Summit X480 AC PSU

For use with the Summit X480-24x, Summit X480-48x, and Summit X480-48t switches

Physical Specifications

- Height: 1.57 inches (4.0 cm)
- Width: 4.8 inches (12.3 cm)
- Depth: 13.31 Inches (33.8 cm)
- Weight 3.64 lb (1.65 kg)

Power Specifications

- Voltage input range 90 to 264 V
- Nominal input ratings 100 to 240 V, 50 to 60 Hz, 8 A
- Nominal input current at full loads 12 A @ 90 V (low-line) 5 A @ 230 V (high-line)
- Line frequency range 47 to 63 Hz
- Maximum inrush current 15 A
- Output 12 V, 37 A max, 450 Watts 3.3 V, 3 A max, 9.9 Watts
- Maximum continuous DC output shall not exceed 450 Watts
- Power supply input socket IEC 320 C14
- Power cord input plug IEC 320 C13
- Power supply cord gauge 18 AWG (0.75 mm2) up to 6 feet or 2 meters or 16 AWG (1.0 mm2) over 6 feet
- Efficiency 84% typical at full load, high line

Summit X480 DC PSU

For use with the Summit X480-24x, X480-48x, and X480-48t switches

Physical Specifications

- Height: 1.57 inches (4.0 cm)
- Width: 4.8 inches (12.3 cm)
- Depth: 13.31 Inches (33.8 cm)
- Weight 2.58 lb (1.17 kg)

Power Specifications

- Nominal Input -48 to -60 VDC, 24 A
- DC Voltage Input Range -40 to -75 V
- Maximum Input Amperages 13.5 A @ 40 V 11.2 A @ 48 V 7.5 A @ 72 V
- Inrush Current 10 A peak
- Inrush Energy 1.5 A2S
- Minimum wire size 14 AWG (1.5 mm2) copper stranded
- DC Output 12 V , 36.7 A/3.3 V, 3.0 A
- DC Output Power (W) 450 W

Technical Specifications

All Summit X480 Series Switches

Regulatory/Safety

North American ITE Safety

- UL 60950-1 1st Ed., Listed Device (U.S.)
- CSA 22.2#60950-1-03 1st Ed. (Canada)
- Complies with FCC 21CFR 1040.10 (U.S. Laser Safety)
- CDRH Letter of Approval (U.S. FDA Approval)

European ITE Safety

- EN60950-1:2006
- EN 60825-1+A2:2001 (Lasers Safety)
- TUV-R GS Mark by German Notified Body
- 2006/95/EC Low Voltage Directive

International Safety of ITE

- CB Report & Certificate per IEC 60950-1:2006 + National Differences
- AS/NZS 60950-1 (Australia/New Zealand)

EMI/EMC Standards

North America EMC for ITE

- FCC CFR 47 part 15 Class A (U.S.)
- ICES-003 Class A (Canada)

European EMC Standards

- EN 55022:2006 Class A
- EN 55024:A2-2003 Class A includes IEC 61000-4-2, 3, 4, 5, 6, 11
- EN 61000-3-2,8-2006 (Harmonics)
- EN 61000-3-3 1995+A2:2005 (Flicker)
- ETSI EN 300 386 v1.3.3, 2005-04 (EMC Telecommunications)
- 2004/108/EC EMC Directive

International EMC Certifications

- CISPR 22: 2006 Ed 5.2, Class A (International Emissions)
- CISPR 24:A2:2002 Class A (International Immunity)
- EC/EN 61000-4-2:2008 Electrostatic Discharge, 8kV Contact, 15 kV Air, Criteria A
- EC/EN 61000-4-3:2008 Radiated Immunity 10V/m, Criteria A
- EC/EN 61000-4-4:2005 Transient Burst, 1 kV, Criteria A
- IEC/EN 61000-4-5:2005 Surge, 2 kV L-L, 2 kV L-G, Level 3, Criteria A
- IEC/EN 61000-4-6:2007 Conducted Immunity, 0.15-80 MHz, 10V/m unmod. RMS, Criteria A
- EC/EN 61000-4-11:2004 Power Dips & Interruptions, >30%, 25 periods, Criteria C

Country Specific

- VCCI Class A (Japan Emissions)
- ACMA (C-Tick) (Australia Emissions)
- CCC Mark
- KCC Mark EMC Approval (Korea)

Telecom Standards

- EN/ETSI 300 386:2005-04 (EMC Telecommunications)
- EN/ETSI 300 019 (Environmental for Telecommunications)
- NEBS Level 3 compliant to portions of GR-1089 Issue 4 & GR-63 Issue 3 as defined in SR3580 with exception to filter requirement
- MEF 9
- MEF 14

IEEE 802.3 Media Access Standards

- IEEE 802.3ab 1000BASE-T
- IEEE 802.3z 1000BASE-X
- IEEE 802.3ae 10GBASE-X

Environmental Standards

- EN/ETSI 300 019-2-1 v2.1.2 (2000-09) – Class 1.2 Storage
- EN/ETSI 300 019-2-2 v2.1.2 (1999-09) – Class 2.3 Transportation
- EN/ETSI 300 019-2-3 v2.1.2 (2003-04) – Class 3.1e Operational
- EN/ETSI 300 753 (1997-10) – Acoustic Noise
- ASTM D3580 Random Vibration Unpackaged 1.5G

Warranty

- Ltd. 1-year on Hardware
- 90-days on Software
- For warranty details, visit www.extremenetworks.com/go/warranty

Ordering Information

Part Number	Name	Description
16301	Summit X480-48t	48 10/100/1000BASE-T, 4 100/1000BASE-X unpopulated SFP (shared), No PSU with two unpopulated PSU slots, one VIM2 slot, ExtremeXOS Advanced Edge license
16301T	Summit X480-48t-TAA	48 10/100/1000BASE-T, 4 100/1000BASE-X unpopulated SFP (shared), No PSU with two unpopulated PSU slots, one VIM2 slot, ExtremeXOS Advanced Edge license, Trade Agreement Compliant model.
16303	Summit X480-24x	24 100/1000BASE-X unpopulated SFP, 12 10/100/1000BASE-T (shared), 2 unpopulated XFP ports, No PSU with two unpopulated PSU slots, one VIM2 slot, ExtremeXOS Advanced Edge license
16303T	Summit X480-24-TAA	4 100/1000BASE-X unpopulated SFP, 12 10/100/1000BASE-T (shared), 2 unpopulated XFP ports, No PSU with two unpopulated PSU slots, one VIM2 slot, ExtremeXOS Advanced Edge license, Trade Agreement Compliant model.
16304	Summit X480-48x	48 100/1000BASE-X unpopulated SFP, No PSU with two unpopulated PSU slots, one VIM2 slot, ExtremeXOS Advanced Edge license
16304T	Summit X480-48x-TAA	48 100/1000BASE-X unpopulated SFP, No PSU with two unpopulated PSU slots, one VIM2 slot, ExtremeXOS Advanced Edge license, Trade Agreement Compliant model.
16311	VIM2-SummitStack	VIM2-SummitStack, 2 SummitStack stacking ports
16312	VIM2-10G4X	VIM2-10G4X, 4 10GBASE-X XFP ports
16313	VIM2-SummitStack128	VIM2-SummitStack128, 2 x 64G stacking ports
16315	VIM2-SummitStack-V80	VIM2-SummitStack-V80, 2 x 40G stacking ports
17121	VIM3-40G4X	VIM3-40G4X, 4 40GBASE-X QSFP+ ports
16321	Summit X480 Core License	ExtremeXOS Core License for Summit X480 series switches
16322	Summit X480 MPLS Feature Pack	ExtremeXOS MPLS Feature Pack for Summit X480 series switches
11011	Direct Attach Feature Pack	Direct Attach Feature Pack for Summit X450a/X460/X480, Summit X650 and BlackDiamond 8800 Series with ExtremXOS 12.5.1 or Greater
16323	Summit X480 OpenFlow FeaturePack	ExtremeXOS SDN - OpenFlow Feature Pack for Summit X480 series switches
10916	Summit X480/X650 FAN Module	FAN module for Summit X480 and Summit X650 series switches, spare
10917	Summit X480 AC PSU	AC Power Supply module for Summit X480 series switches
10918	Summit X480 DC PSU	DC Power Supply module for Summit X480 series switches
10319	QSFP+ SR4 module	40 Gigabit Ethernet QSFP+ SR4 optical module, MPO connector, 100m link length
10121	10GBASE-SR XFP	10GBASE-SR XFP Transceiver, 850nm, up to 300m on Multimode Fiber, LC Connector
10122	10GBASE-LR XFP	10GBASE-LR XFP Transceiver, 1310nm, up to 10km on Single-mode Fiber, LC Connector
10124	10GBASE-ER XFP	10GBASE-ER XFP Transceiver, 1550nm up to 40km on Single-mode Fiber, LC Connector
10125	10GBASE-ZR XFP	10GBASE-ZR XFP Transceiver, 1550nm, up to 80km on Single-mode Fiber, LC Connector
10200	Tunable DWDM XFP	10 Gigabit Ethernet XFP Tunable DWDM module, C-band, SMF 80km, LC connector
10051	1000BASE-SX SFP	1000BASE-SX SFP, LC Connector
10052	1000BASE-LX SFP	1000BASE-LX SFP, LC Connector
10053	1000BASE-ZX SFP	1000BASE-ZX SFP, Extra Long Distance SMF 70 km/21 dB Budget, LC Connector

[1] Not supported on Combo ports

Ordering Information, Continued

10056	1000BASE-BX-D SFP	1000BASE-BX-D SFP, SMF (1490nm TX/1310nm RX Wavelength)
10057	1000BASE-BX-U SFP	1000BASE-BX-U SFP, SMF (1310nm TX/1490nm RX Wavelength)
10060	100FX/1000LX SFP[1]	100FX/1000LX SFP, SMF, LC Connector (Requires MCP and 6dB Attenuator for 100FX-MMF Operation)
10063	100FX SFP[1]	100FX SFP, MMF, LC Connector
10064	1000BASE-LX100 SFP	1000BASE-LX100 SFP, Extra Long Distance SMF 100 km/30dB Budget, LC Connector
10065	10/100/1000BASE-T SFP[1]	10/100/1000BASE-T, SFP, CAT 5 cable 100m, RJ-45 Connector
10067	100BASE-FX SFP	100M SFP, 100FX MMF, (1310nm, 2km multimode transmission) LC connector
10066	100BASE-LX10 SFP	100M SFP, 100LX10 SMF, (1310nm 10km singlemode transmission) LC connector
10058	100BASE-BX-D SFP	100M SFP, 100BASE-BX-D, SMF (1550nm TX/1310nm RX wavelength), 100 Mbps bidirectional
10059	100BASE-BX-U SFP	100M SFP, 100BASE-BX-U, SMF (1310nm TX/1550nm RX wavelength), 100 Mbps bidirectional
10311	0.5m QSFP+ Passive Copper Cable	40 Gigabit Ethernet QSFP+ passive copper cable assembly, 0.5m length
10312	1m QSFP+ Passive Copper Cable	40 Gigabit Ethernet QSFP+ passive copper cable assembly, 1m length
10313	3m QSFP+ Passive Copper Cable	40 Gigabit Ethernet QSFP+ passive copper cable assembly, 3m length
10323	5m QSFP+ Passive Copper Cable	40 Gigabit Ethernet QSFP+ passive copper cable assembly, 5m length
10315	10m QSFP+ Active Optical Cable	40 Gigabit Ethernet QSFP+ active optical cable assembly, 10m length
10316	20m QSFP+ Active Optical Cable	40 Gigabit Ethernet QSFP+ active optical cable assembly, 20m length
10318	100m QSFP+ Active Optical Cable	40 Gigabit Ethernet QSFP+ active optical cable assembly, 100m length
10321	QSFP+ - 4xSFP+ fan-out cbl, 3m	QSFP+ to 4 x SFP+ fan-out copper cable, 3m
10322	QSFP+ - 4xSFP+ fan-out cbl, 5m	QSFP+ to 4 x SFP+ fan-out copper cable, 5m
16106	Stacking Cable, 0.5M	SummitStack/UniStack™ Stacking Cable, 0.5M
16107	Stacking Cable, 1.5M	SummitStack/UniStack Stacking Cable, 1.5M
16108	Stacking Cable, 3.0M	SummitStack/UniStack Stacking Cable, 3.0M
16105	Stacking Cable, 5.0M[2]	SummitStack Stacking Cable, 5.0M
17030	Stacking Cable 64G, 1.0M	SummitStack128 Stacking Cable, 1.0M
17026	Stacking Cable 128G to 64G, 1.0M	Conversion cable for SummitStack256 and SummitStack128, 1.0M
17034	Stacking Cable 128G to 20G, 1.0M	Conversion cable for SummitStack256 and SummitStack, 1.0M
17038	Stacking Cable 64G to 20G, 1.0M	Conversion cable for SummitStack128 and SummitStack, 1.0M

[1] Not supported on Combo ports [2] Not supported when using with Summit X650 and UniStack

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